

REMARKS

Reconsideration of the present application is respectfully requested.

Claims 16-22 have been canceled. Claims 1-7 and 11 have been amended. New claims 26-34 have been added. No new matter has been added. Support for new claims 26-34 can be found in the application as originally filed at (*inter alia*) page 6, paragraph [0019] and in Figures 6A through 6D.

The specification has been amended on page 1 to correct a minor grammatical error.

Election/Restriction

The Office has identified two groups of claims as representing distinct inventions, i.e., Group I (claims 1-15 and 23-25) and Group II (claims 16-22), and has required election of one of said groups. In addition, the Office has identified two separate species, i.e., Species I (pin) and Species II (solder ball).

In response, Applicant affirms the telephone election of the Group I claims (1-15 and 23-25) and Species II (solder ball). Applicant respectfully submits that all claims except claims 3, 8 and 12 are readable upon the elected species (Species II).

Drawings

The Office has objected to the drawings as being improperly cross-hatched. Accordingly, accompanying this amendment is a separate Submission of Formal Drawings including corrections to all of the figures, which Applicant believes now

comply with the applicable cross-hatching requirements. All of the figures have been amended to correct the cross-hatching. None of the changes affect the substance of the application. Applicant respectfully requests that the changes to the drawings be approved and that the objection to the drawings be withdrawn.

Applicant has not submitted a separate copy of the figures showing the changes in red ink or other highlighting, because Applicant has altered most of the cross-hatching in the figures. Consequently, showing the changes in red ink or highlighting would make the figures difficult for the Office to read and would be difficult for Applicant to produce, since most elements shown in the figures are cross-hatched. Applicant respectfully submits, however, that the changes are readily apparent even without being shown in red ink or other highlighting. Applicant therefore respectfully requests that the Office waive the requirement for a separate copy of the figures with the changes shown in red ink or other highlighting.

Rejections under 35 U.S.C. § 112

Claims 2-4 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Applicant believes that the amendment to claim 2 overcomes this rejection.

Prior Art Rejections (35 U.S.C. §§ 102 and 103)

Claim 1 stands rejected under 35 U.S.C § 102(b) as being anticipated by U.S. Patent no. 5,949,029 of Crotzer et al. ("Crotzer"). Claims 2, 4 and 5 stand rejected under 35 U.S.C § 103(a) as being unpatentable over Crotzer in view of U.S. Patent no. 6,441,485 of Glenn ("Glenn"). Claims 6, 7, 9-11, 13-15 and 23-25 stand rejected under

35 U.S.C § 103(a) as being unpatentable over Crotzer in view of Glenn and U.S. Patent no. 5,340,947.

The claims, as amended, are patentable over the cited references. The present invention relates to an improved technique for coupling an electronic device package to a circuit board, which avoids the need for a socket or other similar interconnecting device between the device package and the circuit board. See, generally, Applicant's specification at paragraphs [0005], [0006] and [0027]. As set forth in amended claim 1, an apparatus according to the invention comprises a circuit board that includes a substrate and a set of electrical traces, with a plurality of through holes in the substrate, and a malleable, electrically conductive material filled within each of the through holes.

Crotzer generally discloses a conductive elastomer and a technique for fabricating a conductive elastomer, such as may be used to make calculator keypads, pushbutton switches, etc. Crotzer further discloses an interconnect device 70 comprising a substrate 72 with an array of openings 78 formed therein, where each of the openings 78 is filled in with an elastic conductive interconnect element 74 (col. 7, lines 43-52). However, Crotzer fails to teach or suggest that a circuit board with electrical traces may have a plurality of through holes in it that contain a malleable, electrically conductive material. The interconnect device 70 in Crotzer is not a circuit board and, accordingly, is not disclosed as having any electrical traces in addition to the openings 78 filled with conductive material 74.

In fact, Crotzer's disclosure of the interconnect element 74 (particularly, that it can be used to connect an integrated circuit package to a printed circuit board; col. 7,

lines 47-50) teaches away from the present invention, which is directed to eliminating the need for a separate interconnect element, such as a socket. Hence, Crotzer clearly cannot be read as providing any suggestion or motivation to attempt to achieve what Applicants claim, nor is there any such suggestion or motivation in the other cited references.


Therefore, claim 1 and all claims which depend on it are patentable over the cited art for at least these reasons. Independent claims 7 and 11 include limitations similar to those in claim 1 discussed above (and other limitations) and are therefore patentable over the cited art for similar reasons, along with their dependent claims. A discussion of the rejections under 35 U.S.C. § 103 is believed to be unnecessary in view of the foregoing considerations.

If any additional fee is required, please charge Deposit Account No. 02-2666.

Respectfully submitted,
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